

IN THE CLAIMS:

1 - 25. (Canceled)

26. (Previously presented) A transgenic, non-human mammalian animal whose genome comprises:
a stably integrated, recombinant nucleic acid encoding a polymeric immunoglobulin receptor (pIgR) protein operatively linked to a mammary specific promoter;
wherein a mammary gland of said transgenic, non-human mammalian animal over-expresses said pIgR protein as compared to expression of the pIgR protein in a mammary gland of a wild-type, non-human mammalian animal;
wherein said pIgR protein transports a polymeric immunoglobulin protein across the basolateral side of a mammary gland's epithelial cell to the apical side of the mammary gland's epithelial cell as compared to a different immunoglobulin protein located on the epithelial cell's basolateral side.

27. (Previously presented) The transgenic, non-human mammalian animal of claim 26, wherein the polymeric immunoglobulin protein is selected from the group consisting of IgM and IgA.

28. (Previously presented) The transgenic, non-human mammalian animal of claim 26, wherein the immunoglobulin protein located on the epithelial cell's basolateral side is IgG.

29. (Previously presented) The transgenic, non-human mammalian animal of claim 26, wherein said transgenic, non-human mammalian animal over-expresses said pIgR protein at least 10-fold higher than the expression of the pIgR protein in the wild-type, non-human mammalian animal.

30. (Previously presented) A method of making the transgenic, non-human mammalian animal of claim 26, said method comprising:
producing a DNA construct comprising a nucleic acid encoding the pIgR protein operably linked to a mammary specific promoter that drives expression of said pIgR protein in a mammary gland epithelial cell;
introducing said DNA construct into fertilized eggs; and
implanting the fertilized eggs into a pseudopregnant, female non-human mammalian animal, thereby producing the transgenic, non-human mammalian animal of claim 26.

31. (Previously presented) The method according to claim 30, wherein said mammary specific promoter is a casein promoter.

32. (Previously presented) A method of collecting an immunoglobulin from the transgenic, non-human mammalian animal of claim 26, comprising:
providing the transgenic, non-human mammalian animal of claim 26; and
collecting milk comprising said polymeric immunoglobulin protein from the mammary gland of said transgenic, non-human mammalian animal.

33. (Previously presented) The method according to claim 32, further comprising isolating said polymeric immunoglobulin protein from the milk.

34. (Previously presented) The method according to claim 32, wherein collecting milk comprising said polymeric immunoglobulin protein comprises collecting milk comprising IgM or IgA.

35. (Canceled)

36. (Previously presented) The method according to claim 32, further comprising administering an antigen to said transgenic, non-human mammalian animal prior to collecting the milk from the mammary gland.

Serial No. 09/621,593

37 - 38. (Canceled)